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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,331	12/20/2001	Yasuo Koike	566.41012X00	2561
20457	7590	04/21/2004	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889			DUONG, THOI V	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,331

Applicant(s)

KOIKE ET AL.

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,6,10,12 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 and 16 is/are allowed.
- 6) ☒ Claim(s) 1,5,10,12,14,15 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0204.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 06, 2004 has been entered.

Accordingly, claims 1, 5, 6, 10, 12, 14, 18 and 19 were amended, and claims 2-4, 7-9, 11 and 13 were cancelled. Currently, claims 1, 5, 6, 10, 12 and 14-19 are pending in this application.

Claim Objections

2. Claim 10 is objected to because of the following informalities: in lines 7 and 8, "said rubbing cloth brings into contact" should be --said rubbing cloth is brought into contact--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 12, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamazoe (JP 04-250423).

As shown in Fig. 1, Yamazoe discloses a method of manufacturing a liquid-crystal display element (as well as an apparatus for manufacturing a liquid-crystal display element), the method comprising:

a rubbing step of bringing a rubbing cloth 6 provided on the surface of a rubbing roller 4 into contact with an alignment film (a resin) formed on the surface of a substrate member 3 to subject the alignment film to rubbing,

wherein said rubbing step controls the surface potential of said rubbing cloth by bringing a charge control member 8, 9 into contact with a rubbing surface of the rubbing cloth, said charge control member having a surface which is covered with a material (rod or foil type conductor) (Abstract).

Fig. 1 also shows a stage 1 for supporting the substrate member 3.

It is inherent that when the rubbing cloth and the alignment film come in to contact for rubbing, the rubbing cloth is positively charged and the alignment film is negatively charged. Hence, the charge polarity of said rubbing cloth is opposed to the charge polarity of said alignment film when said rubbing cloth comes into contact with the surface of said alignment film and the charge control member is being contact-charged to the polarity charge of the rubbing cloth which is different from the polarity charge of the surface of the alignment film (or the substrate member).

5. Claims 10 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakajima (JP 11-014994).

As shown in Fig. 1, Nakajima discloses a method of manufacturing a liquid-crystal display device, the method comprising:

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a rubbing step of bringing a rubbing cloth provided on the surface of a rubbing roller 32 into contact with an alignment film 35 formed on the surface of a substrate member 35 to subject the alignment film to rubbing.

Nakajima discloses that while the surface of the rubbing cloth is charged with minus ions, the rubbing cloth is brought into contact with the surface of the alignment film. Since minus static charge is generated on the alignment film during rubbing, the surface of the rubbing cloth is charged with the same polarity as the surface potential of the alignment film (Abstract).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazoe (JP 04-250423) as applied to claims 1, 12 and 15 in view of Osaki et al. (JP 05-107543).

Yamazoe discloses a manufacturing apparatus for manufacturing a liquid-crystal display element that is basically the same as that recited in claim 14 except for a sensor to control the surface potential of the charge control member. As shown in Fig. 1, Osaki et al. discloses a sensor 6 for measuring and monitoring the static electricity charge generated on a rubbing cloth 2 provided on said rubbing roller surface which comes into contact with said alignment film (Abstract). Thus, it would have been obvious to one

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having ordinary skill in the art at the time the invention was made to modify the apparatus of Yamazoe with the teaching of Osaki et al. by providing a sensor located near the surface of the rubbing cloth to control the surface potential of the charge control member.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazoe (JP 04-250423) as applied to claims 1, 12 and 15 in view of Osaki et al. (JP 05-107543) and Sugawara et al. (JP 11-258609)

Yamazoe discloses a method of manufacturing a liquid-crystal display element that is basically the same as that recited in claim 5 except that the potential of said rubbing cloth is feed back-controlled in accordance with a measured value obtained by measuring the surface potential of said rubbing cloth and the surface potential of said alignment film.

As shown in Fig. 1, Osaki et al. discloses a sensor 6 for measuring and monitoring the static electricity generated on a rubbing cloth 2 provided on said rubbing roller surface which comes into contact with said alignment film so as to enable exact setting of the pressing for rubbing (see Abstract).

Further, as shown in Figs. 1 and 2, Sugawara et al. also discloses a sensor 7 for measuring the surface potential of the substrate 10 and a controller 8 for controlling the a voltage outputted from the electric power source 3 based on the data measured by the sensor 9 (Abstract).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Yamazoe with the teachings of

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Osaki et al. and Sugawara et al. by employing the sensors to measure the surface potential of the rubbing cloth and the surface potential of the alignment film and feed back to the controller so as to set adequate output voltage for the charge control member to suppress the static electricity.

9. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazoe (JP 04-250423) as applied to claims 1, 12 and 15 in view of Afzali-Ardakani et al. (USPN 5,571,852).

Yamazoe discloses a method for manufacturing a liquid-crystal display element that is basically the same as that recited in claims 18 and 19 except for the surface of the charge control member made of a polyimide resin. Afzali-Ardakani et al. discloses that the use of polyimides is widely known since it has very high temperature resistance, low dielectric constant as well as good mechanical strength (col. 3, lines 10-30). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Yamazoe with the teaching of Afzali-Ardakani et al. by forming a polyimide resin at the surface of the charge control member so as to obtain a member having good physical properties for intended use.

Allowable Subject Matter

10. Claims 6 and 16 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claim 6, none of the prior art of record discloses, in combination with other limitations as claimed, the surface potential of said rubbing cloth having the same

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polarity as the surface potential of said alignment film when said rubbing cloth comes into contact with the surface of the alignment film.

The most relevant references, JP 05-107543 and JP 11-258609, fail to disclose or suggest that the surface potential of the rubbing cloth has the same polarity as the surface potential of the alignment film when said rubbing cloth comes into contact with the surface said alignment film. The references only disclose the sensors to measure and feedback static charge and a controller to control the static charge when said rubbing cloth comes into contact with the surface said alignment film, wherein the surface potential of the rubbing cloth is different from the surface potential of the alignment film.

Response to Arguments

11. Applicant's arguments filed February 06, 2004 have been fully considered but they are not persuasive.

Re claims 1 and 12, Applicant argued that Yamazoe teaches away from Applicant's claimed invention since Yamazoe is not an arrangement "...which brings said rubbing cloth to take a charge whose polarity is opposed (or "different from" in claim 12) to a charge of said alignment film...". The Examiner disagrees with Applicant's remarks since Yamazoe meets every limitations recited in the claims, especially, a charge control member (8 and 9) is brought into contact with a rubbing surface of the rubbing cloth to control the static electric charge. As known in the art, when the rubbing cloth comes into contact with the surface of the alignment film, the cloth is positively charged and the alignment is negatively charged, which is regarded as natural based on

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the principle of contact charge. Therefore, when the charge control member is brought in contact with the rubbing surface of the rubbing cloth, it will take the positive charge of the rubbing cloth, which is opposed to the negative charge of the alignment film.

Finally, Applicant's remarks in support of traversal of the rejection and patentability of Applicant's claims are also considered; however, the limitations recited in the claims do not clearly point out the patentable novelty of the claimed invention.

Conclusion

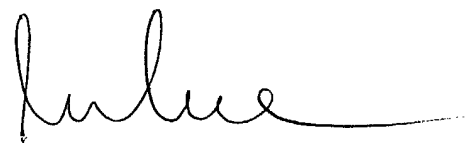
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



04/14/2004



DUNG T. NGUYEN
PRIMARY EXAMINER